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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/807,214

08/08/2001

Takaya Sato

001-03-033

4316

35870

7590

05/18/2006

APEX JURIS, PLLC

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/807,214

Applicant(s)

SATO ET AL.

Examiner

Julian Mercado

Art Unit

1745

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 2, 2006 has been entered.

Claims 1-13 are pending.

### ***Claim Rejections - 35 USC § 102 and 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hayashi et al. (JP 8-287951).

Claims 1-5 and 11-13 are rejected under 35 U.S.C. 103(a) as obvious over Bai et al. (U.S. Pat. 5,744,258) in view of Hayashi et al.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bai et al. in view of Hayashi et al. as applied to claims 1-5 and 11-13 above, and further in view of Dahn et al. (U.S. Pat. 4,969,254).

The rejections are maintained for the reasons of record. The declaration under 37 CFR 1.132 filed on May 2, 2006 is insufficient to overcome the rejection of the present claims based upon The Encyclopedia of Smart Materials as set forth in the last Office action because of the following reasons.

As an initial matter, the examiner notes that The Encyclopedia of Smart Materials was relied upon in the prior rejection as a basis for rebuttal of applicant's argument—that polyaniline is not ion conductive. To this extent, the prior Office action relied on the section of the document which is maintained to teach "High ion exchange capacity."

Applicant submits that the ions become "non-migratable and instead generate the carrier" and that the dopant, once attached, cannot migrate. Applicant is kindly requested to clarify what is being equated with "the carrier" and "the dopant". Notwithstanding, this argument is not persuasive; note the double-headed arrows of the equilibrium condition. Also refer to page 281 which clearly states that "protonation/deprotonation equilibria occur for two of these oxidation states..." If by "dopant" applicant's arguments are in reference to the cationic species, it is clear from the reference that such dopant can migrate depending on the ox/redox state of the polymer.

Applicant submits, under the header "What is Ion Exchange Capacity", that "'high ion exchange capacity' and ion conductivity is totally different." The basis or rationale for this

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argument is unclear, other than being an assertion that (some type of) differences exist.

However, just the same the examiner is aware that the prior Office action may have merely implied some relation between ion exchange and ion conductivity without necessarily exemplifying how such a relation may exist. Thus, as a basis for prior art not relied upon but considered relevant to applicant's disclosure, and more importantly to show that there is a causal link between ion exchange and ion conductivity, the examiner relies on U.S. Patent 6,765,027 B2 to Holdcroft et al. Please refer to col. 1 line 19 et seq. and col. 6 line 10 et seq. and note that ion-exchange materials in fields such as electrochemical processes (e.g. both fuel cells and batteries) will conduct cations and anions, i.e. both positive and negative ions. Indeed, ion-exchange materials used as electrolyte membranes are requisitely ion-conducting.

Applicant is also reminded as set forth in the prior Office action and independent from The Encyclopedia of Smart Materials teaching polyaniline having ion conduction *viz.* its oxidation states, the scope of the present claims do not preclude ion conduction within a polymer such as by the lithium salts that are dissolved therein. That is, a prior art showing which meets the claimed "ion conducting polymer [which] dissolves at least the lithium salts..." will naturally result in an ion-conducting polymer. This basis for rejection has not been addressed in the present amendment.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "P. Ryan", with a stylized flourish below it.A handwritten signature in black ink, appearing to be "P. Ryan", with a stylized flourish below it.

**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**